

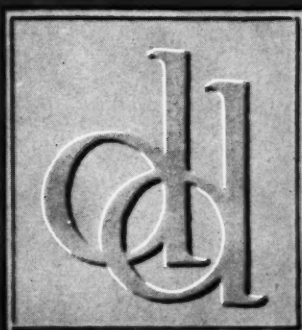
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THE DENTAL DIGEST



SEPTEMBER, 1939

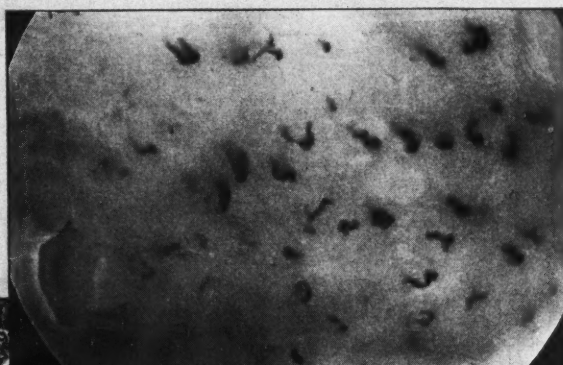
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About Our CONTRIBUTORS

ICK THORNTON HIMOFF, D. D. S. (University of Pennsylvania; now working for B. S.) has been teaching oral surgery at Coney Island Hospital for five years. Doctor Himoff is another general practitioner to present a DIGEST clinic.

JAMES LOY BOWMAN (B.S., Blackburn College; D.D.S., Washington University School of Dentistry, St. Louis) was a high school mathematics teacher for several years. That is probably why Gothic arch tracings and original triangles seem so simple to him. It would seem to indicate that we can depend on the accuracy of CENTRAL AND LATERAL MARKINGS IN BITE AND JAW RELATION in this issue.

VOLNEY CABOT STIVERS, B.S., D.D.S. (Kansas City-Western Dental College, 1927) is a general practitioner who wrote to us on submitting his material: "This is my first attempt to prepare a clinic for publication, although I have been constructing this restoration in the mouth for seven years and can give assurance that it is strong, neat and acceptable to the esthetic eye. This one-piece casting made indirectly shows no gold, although the patient bites on gold, and there is a gold contact to the adjacent tooth. I have from time to time taken many things offered in THE DENTAL DIGEST and put them into practical use. I hope some other fellow can take this restoration technique into his practice."

JEROME M. SCHWEITZER, B. S., D. D. S. is known to our readers primarily for his cases of skillful mouth reconstruction which he photographs so well. In the unusual case reported in this issue Doctor Schweitzer was assisted by his mechanic, Anthony D'Agostino, in executing the mechanical details.

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Ethel H. Davis, A.B., *Assistant Editor*

708 Church Street, Evanston, Illinois

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Moulage of the Face*

ICK THORNTON HIMOFF, D.D.S., Brooklyn

THE MOULAGE OF THE face, or facial cast, is by no means an innovation in dentistry, its allied professions, or fine arts. Previous to the introduction of the hydrocolloid composition, the materials and techniques employed limited the use of this fine type of permanent record to a few who were especially good technicians. The impression medium used was plaster of Paris, beeswax, clay, paraffin or papier-maché. These were found somewhat cumbersome and inadequate, because of the preparation of the subject, and the uncertainty and discomfort to both subject and operator. The hydrocolloid material now used, however, is easy to apply in its warmed, liquid state; is cleaner to work with; the results are more uniform; and, upon cooling, the impression takes on a rubber-like consistency, which is not distorted and is consequently accurate.

The moulage has a definite value in dentistry as a permanent record of a three dimensional image, instead of the two dimensions obtained from photographs. The dentist may use the moulage as a blueprint for reconstruction in extensive oral surgery, prosthetics, orthodontia, surgical prostheses, and any other dental procedure that involves some change in the facial contours or expression.

Technique

In the technique to be described here, the impression medium used is a hydrocolloid (negocoll) with a reinforcement of plaster of Paris. This is a modification of the late Doctor Poller's technique.

Preparation of Patient—The only necessary preparation of the subject is his comfort; the material is so gel-like that it is not necessary to apply vaseline, cold cream, or powder to the face. The patient should be in a relaxed position at all times. A suitable chair with a headrest attached so that normal breathing can be maintained throughout the whole procedure

is of paramount importance. This enables the subject to maintain a fixed expression while the operator is applying the material. It is also important that the operator explain the procedure to the subject, so that he will not be "afraid" or "surprised" at what will be done to him.

Materials—The materials needed are 2 kilograms (one can of a little less than a pound) of negocoll; a large enamelware double boiler; a wooden stirring spoon; three brushes (1½ inches, 1 inch, and one-fourth inch); one plaster bowl; one plaster spatula; plaster of Paris, casting stone; a square of cardboard (10 inches by 10 inches); one dozen gauze strips (4 by 6 inches); and a rubber apron (Fig. 1).

Sterilization — The negocoll is boiled for sterilization. Approximately one hour before the patient arrives, it is advisable to start cooking the material in the enamelware double boiler. The negocoll should be stirred frequently with the stirring spoon until the mass takes on a heavy cream-like consistency, and is free from lumps. If desired, it may be thinned by adding water while it is still cooking. The material should be cooled to body temperature before applying it to the face.

Taking the Negative for Moulage—

1. The cardboard square should be cut and fitted under the chin of the subject (Fig. 2) like a collar, and should be used as a matrix in preventing the plastic material from becoming unmanageable.

2. With the 1 inch brush, a seal is made between the cardboard and the neck (Fig. 3).

3. With short, deft strokes, keeping the negocoll ahead of the brush, the material is painted on in layers one fourth of an inch thick at a time, from the neck upward. Gradually the material is spread over a broader and broader surface. This is done until the whole face, except the eyes, the nose, and the mouth (Fig. 4), is completely covered with the negocoll.

4. In covering the eyebrows and the

eyelids, it is well to follow the grain of the hair (Fig. 5).

5. The nose is covered in the same manner as the face except that a smaller brush is used.

6. It is not necessary to use breathing tubes in the nostrils, as the negocoll can be applied with the quarter inch brush into the vestibule of the nose without obstructing the air passage (Fig. 6). This remains open throughout the process.

7. Additional negocoll is added with the inch and a half brush to build up the impression to a thickness of approximately one-half inch over-all.

8. Allow to cool and set.

9. Saturate a gauze strip in a loose mix of plaster of Paris and spread it over the negocoll glove and cardboard collar (Fig. 7).

10. In succession, the plaster-soaked gauze strips are added over the entire glove (Fig. 8), leaving the area of the nostrils open.

11. The remaining plaster, which by this time is of a heavier consistency, should be added to the uncovered portions with the plaster spatula (Fig. 9).

12. With the small brush, the plaster is added around the nostrils (Fig. 10). The addition of the plaster of Paris glove to the negocoll impression is merely for reenforcement purposes, and for handling when pouring the positive cast; however, this plaster glove should be light in weight so as not to distort the soft tissues of the face.

13. The process of removing the

Fig. 1—Materials used for making a moulage or face mask.

Fig. 2—Cardboard collar used as matrix to control plastic material.

Fig. 3—Seal made between cardboard and neck.

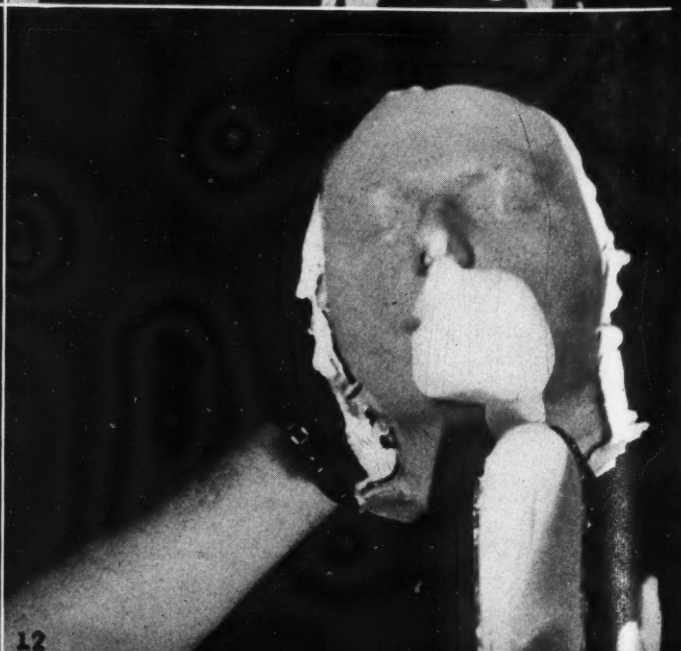
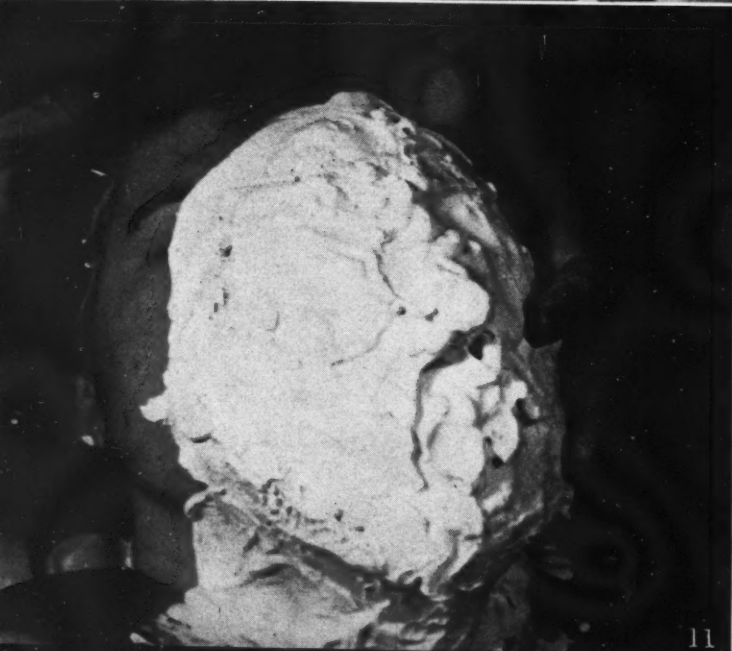
Fig. 4—Plastic material applied with short, deft strokes from neck upward.

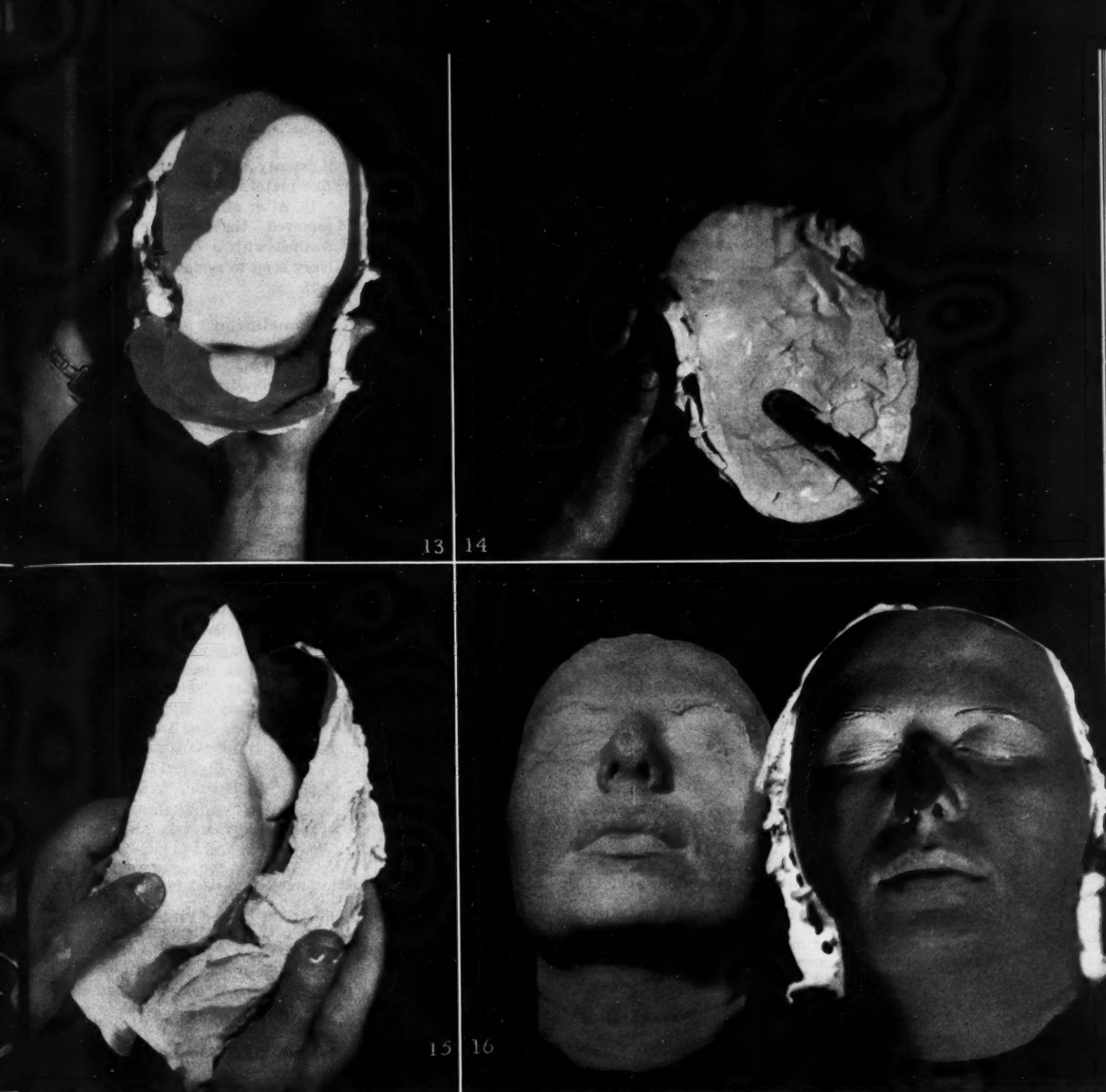
Fig. 5—In covering eyebrows and eyelids the grain of the hair is followed.

Fig. 6—Plastic material can be applied into vestibule of nose without obstructing air passage.

*The photography for this article was done by I. Ellman, D.D.S., Brooklyn.







Figs. 7 and 8—Gauze strips, saturated in loose mix of plaster of Paris are spread first over collar, then over entire glove, leaving nostrils open.

Fig. 9—Remaining heavier plaster added to uncovered portions.

Fig. 10—Plaster added around nostrils with small brush.

Fig. 11—Easing off the mask.

Figs. 12 and 13—Artificial stone poured into corner of negative and rotated while negative impression is held in both hands.

Fig. 14—Remainder of stone batch added to fill entire negative with uniform layer.

Fig. 15—Peeling off of hydrocolloid glove.

Fig. 16—Finished mouldage.

mask from the face is interesting, because it is at this point that the operator learns of his success. Care should be taken not to remove the mask until the plaster-dipped gauze strips are

dried hard. With a blunt-edged spatula, the peripheral seal should be cut and the flexible soft tissues (forehead, neck, ears) stretched so that the contact is broken, thereby facili-

tating the removal. Placing one hand on the forehead part of the plaster, and the other hand on the cardboard square (Fig. 11) ease off the mask carefully and slowly, pulling away in

the line of least resistance. This completes the negative for the moulage, time involved being twenty minutes.

14. *Pouring Positive for Mask*—The second half of the technique is the making of the mask. The pouring of the positive should be done with the same amount of precision as in taking the negative:

a) A large clean, plaster bowl, filled three-fourths full with cold water is used to receive sifted casting stone or casting plaster.

b) Enough artificial stone is mixed to make a heavy, cream-like consistency.

c) Part of the batch should be poured immediately into a corner of the negative (Fig. 12) and rotated, the negative impression being held in both hands (Fig. 13).

d) The remainder of this batch is added and the process repeated, until the entire negative is filled with a uniform layer of artificial stone (Fig. 14).

e) This is allowed to stand for two minutes and a second layer is added,

the same method being used in building up the thickness as shown in Fig. 14.

f) At this point, one may reenforce the positive with a layer of saturated stone-dipped gauze, which is applied over the second layer or veneer. The time consumed in this operation is ten minutes. The veneer method of building up the positive increases the strength and decreases the weight of the cast. A 1 inch over-all thickness of stone is sufficient for a substantial moulage. This should now be allowed to stand until after the "initial set," approximately thirty minutes, when all the chemical heat has been dissipated.

15. *Removing Glove*—The peeling off the hydrocolloid glove (Fig. 15) is really the most thrilling part of this type of work. For it is here that one actually begins to see an exact replica of the subject. This glove usually rips off in one piece, leaving the positive and the negative (Fig. 16); however, if the plaster glove comes off separately and the hydrocolloid remains,

it is easy to "shell-off" this rubber-like material.

16. After all the negocoll has been removed, the moulage should be washed with a cleaning brush and ivory soap to remove spicules of colloid.

Conclusion

The technique described is simple and easily learned. The time element involved, from the start to the completed positive mask, is one hour. The cost of the material is inexpensive. The negocoll should be washed clean and saved for future use. It must be kept in a moist humid container to prevent it from drying. The negocoll, with proper care, can be used repeatedly. The rubber-like property of the material obviates any special preparations of the subject. The general practitioner can keep abreast with modern dentistry by incorporating the moulage as a valuable adjunct in prosthetics, orthodontia, and oral surgery.

1814 Avenue J.

A. M. A. EXONERATED IN ANTITRUST SUIT

THE GOVERNMENT's antitrust proceedings against the American Medical Association were dismissed July twenty-sixth by Justice James M. Proctor of the District of Columbia Federal Court. According to the United Press story, he held that the practice of medicine is a profession and the Sherman Antitrust Act does not apply to it. In his opinion the Act applied only to business and trades.

On the grounds that they had conspired to restrain trade by fighting a group system providing medical care at flat monthly charges, the Department of Justice had obtained indictments some months ago against the American Medical Association, three other medical organizations, and twenty-one physicians. Justice Proctor's action sustained the Association's demurrer to the indictment. Unless his ruling is reversed by a higher court, it will close the case in favor of organized medicine.

The action by the government was undertaken when the Group Health Association, Inc., protested that the District of Columbia Medical Society was discriminating against it. The Group was formed in Washington, D. C., to provide low-cost medical care, especially for the lower income groups. It claimed that certain hospitals and physicians refused to accept patients referred to them by the Group's physicians. Following eight weeks investigation of these charges, the government presented the case to the grand jury in the District of Columbia. The indictments followed.

Central and Lateral Markings in Bite and Jaw Relation

J. L. BOWMAN, B.S., D.D.S., Gillespie, Illinois

It WILL BE ASSUMED that the patient has a full set of natural teeth and that accurate measurements are to be taken of the facial contour, the height and length of the teeth, the distance from the base of the nose to the midline under the chin, and the Gothic arch tracing which is triangular in form. The apex of the triangle thus formed represents the farthest retrusive position of the mandible to the maxilla. For convenience, this will be called the original triangle (Fig. 1, A). If dentures are constructed from these measurements, none of which varies so much as a millimeter, the centric relation will be correct; but if these measurements vary more or less, then the centric relation will not correspond to the apex of the original triangle.

In the case of a closed bite (Fig. 1, B), it will be noted that the apex of the new triangle will not coincide with the apex of the original triangle, but will take an anterior position. If the bite is opened, the reverse will occur (Fig. 1, C). It is sometimes necessary to open or close the bite after the models are mounted on the articulator in order to parallel the ridges in the bicuspid region and for esthetic reasons. Here likewise the triangle is changed in the same relation as has been mentioned.

It appears that the Gothic centric relation is not a constant factor but a variable one, owing to the wearing down of the natural teeth in the mastication of food, and because of the settling and absorption of the gums under artificial dentures. The change in the shrinkage of the gums is a slower process with natural teeth than under dentures; but the end-result, although less marked, is the same. All measurements used in the construction of dentures, therefore, must be kept on file. The patient should return at stated intervals and measurements should be taken. If a

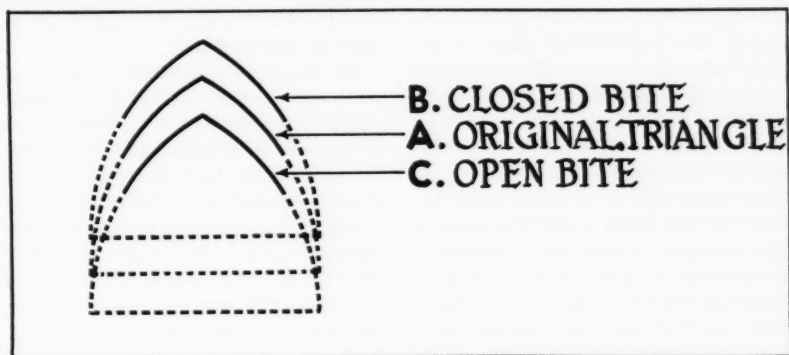


Fig. 1

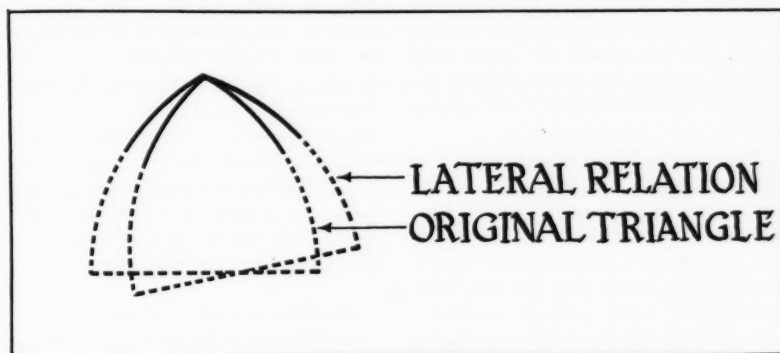


Fig. 2

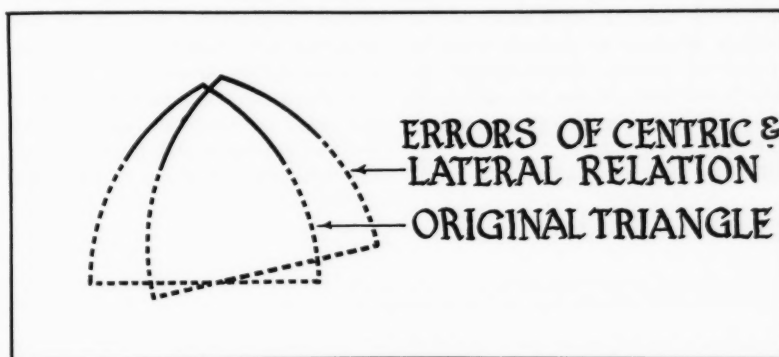


Fig. 3

marked discrepancy is found to develop between the new measurements and the ones used in constructing the

dentures, adjustments should be made at once.

Errors of centric relation are ex-

hibited by patients whose nose and chin appear to meet, often with deep wrinkles at the corners of the mouth. These are patients with closed bite. Open-bite patients present a different picture. The teeth appear to be prominent and cannot be covered by the upper lip. The mouth cannot be opened wide enough to receive the food on account of the prominence of the teeth. Patients complain of aching in the mandibular joint. A patient who shows the pink vulcanite may have an open bite, but in many of these cases, the labial portion of the denture should have been removed and short-bite teeth should have been used in denture construction. In the cases cited, the apex of the triangle is anterior or posterior to the original triangle, depending on whether the bite is opened or closed. The result is that the centric relation has been lost.

The types of cases of lost centric relation which have been mentioned may be corrected by rebasing the lower denture if the errors are not too great. In some cases, the upper may be rebased and the lower denture remade. In extreme cases the dentures must be completely remade.

The patient who exhibits errors in lateral relation has difficulty in eating because the denture jumps first on one side and then on the other (Fig. 2). Such a patient often grows disgusted, removes the denture, and finishes his meal without the denture. In time the denture is not worn at all. Another patient may complain that the denture fits on one side, but that the tissue cannot tolerate it on the other side. In such cases if the centric relation is correct there is found a lateral displacement in which the base of the triangle is to the right or to the left of the base of the original triangle.

In the lateral relation the teeth

may not have been properly balanced in the wax set-up or the flask properly closed in the vulcanization. If the error is small and the posterior teeth on the two sides do not show the same pressure when tested, it is permissible to grind the teeth until the test shows the dentures to be balanced. If the upper and lower posterior teeth are off the ridge, nothing can be done except to remake one or both of the dentures.

In some cases there is an error of both the centric and lateral relation existing together (Fig. 3). Sometimes a patient wearing full upper and lower dentures wishes to have new dentures made. An impression is then made of the patient's mouth and the patient is told to close naturally. This he does and appears to produce all necessary jaw movements. After the dentures have been constructed, however, on being fitted into the mouth, it may be noted that there is a protrusion of the mandible of almost a fourth of an inch, and the teeth on one side may be off the ridge. On replacing the old dentures in the mouth, it will be noted that the same discrepancies exist. This is a case in which not only errors of centric and lateral relation exist but errors of habit. The patient must overcome the habit of closing his mouth incorrectly or it will be impossible to construct satisfactory dentures.

Prevention of Centric and Lateral Errors

In the construction of full upper and lower dentures, it is possible to eliminate many of the difficulties of centric and lateral relation by first finishing the upper denture before attempting the lower:

1. Place the compound bite-rim of the lower on its model and register the wax set-up of the upper teeth in the softened compound of the lower

bite-rim before removing the upper model from the articulator.

2. After the finished upper has been placed in the mouth, soft wax is added to the lower bite-rim and the patient is told to close until the hard wax is encountered. Measurements taken should not differ materially from the original ones.

3. The lower trial plate is placed on the model; plaster is added to the impression of the teeth, and the whole is attached to the upper bow of the articulator.

4. The bite-rim is separated from the plaster. A plaster model is thus had of the upper denture in the same relation on the articulator as the upper wax set-up.

5. The set-up of the lower teeth in wax is placed on its model and the occlusion checked with the plaster model.

6. Small errors can be adjusted by resetting the teeth. If errors of centric or lateral relation occur, they must be corrected as previously suggested.

Comment

Dentures, no matter how closely they resemble the natural teeth or how efficient they may be, are a mechanical substitute for the natural dentition. The patient has a right to demand that his new dentures remain on the ridges in all movements of mastication; that they can be worn at all times with comfort, and that the teeth harmonize with the facial contour and coloring. Most patients are willing to lend all the assistance they can because of pride in their appearance and to maintain a state of good health. The greater part of success rests with the dentist rather than with the patient.

114 East Elm Street.

Indirect Method for Full-Cast Window Inlay with Silicate Restoration

V. C. STIVERS, B.S., D.D.S., Kansas City, Missouri

Technique for Restoration of Incisal Angle

1. Prepare the cavity as shown in Fig. 2.
2. With a Joe Dandy safe-sided disk, cut well down toward the interproximal space.
3. With the stone, bring the preparation of the incisal edge well down to the lingual. The labial-incisal margin should not be cut down but smoothed.
4. Clean and prepare the interproximal seat of the cavity. Here care should be taken to bevel the margins represented from A to B in Fig. 2. Strength and stability may be added to the restoration by beveling from A to the lingual third of the tooth, as

the gold at this point has no effect on the translucency of the enamel at the incisal third of the tooth. A strong lingual seat is absolutely necessary in the cavity preparation.

5. Prepare a lock-step as shown in Fig. 2. This may be done with a number 557 cross-cut fissure bur and then square with chisels. The distal wall of the lock-step must be flat or parallel to the mesial of the tooth, as the contact of the restoration and lock-step is depended on for incisal stability. The base stability of the restoration depends on the contact and lingual step and bevel in addition to the cement.

6. If the decayed area should fall to the lingual of the line A to C or D to

B, clean it away thoroughly and leave the margins square. But before taking a compound impression, fill the undercuts with cement. This cement is removed when the final casting is on the tooth and the cement is replaced by silicate at the final sitting.

7. Actual measurements are made of the original tooth mesio-distally; then a model, poured in hard stone (Fig. 3), is built to these measurements. An undercut is made in the axial wall of the model to aid in holding the stone to be added to restore the tooth to its original anatomic measure, mesio-distally.

8. With a Joe Dandy disk, slice off some of the mesial wall but let enough of the wall remain to insure ample

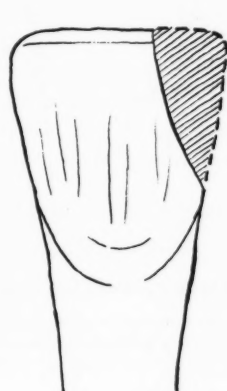


Fig. 1

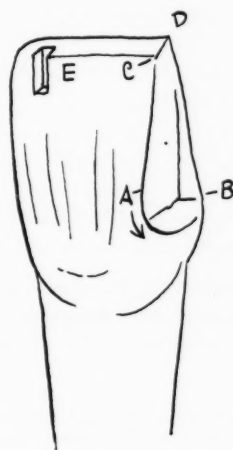


Fig. 2

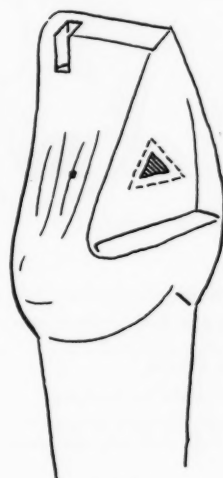


Fig. 3



Fig. 4

Fig. 1—Lingual view and portion of tooth decayed or broken.

Fig. 2—Tooth prepared for compound impression. Note: (1) lock-step; (2) incisal preparation brought well to lingual, as this gives stability; (3) square margins of prepared tooth which approximate porcelain; (4) beveled margins that are to approximate gold: A-B and C-E.

Fig. 3—Mesial view of model separated with undercut (triangular) prepared on axial wall.

Fig. 4—Model built up to original tooth measurements; pour impression with hard stone; separate; make an undercut on axial wall and add hard stone until normal contour of original tooth is restored.



Fig. 5

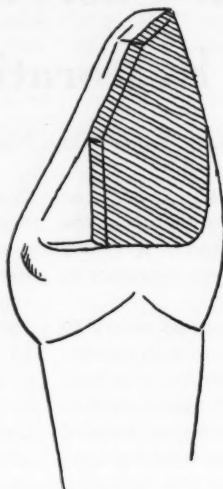


Fig. 6



Fig. 7

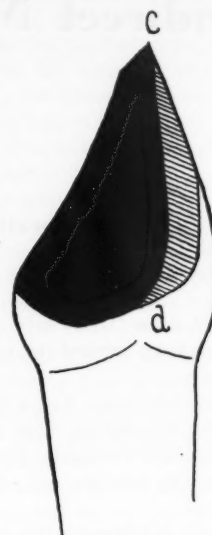


Fig. 8

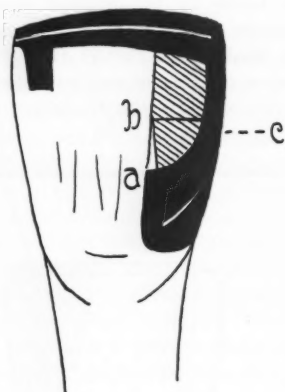


Fig. 9

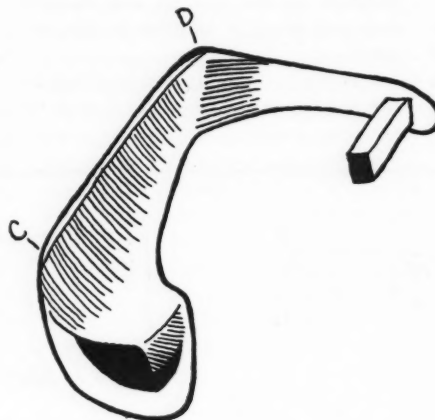


Fig. 10



Fig. 11

Fig. 5 and 6—Model prepared and ready for waxing. Note particularly Fig. 6 how step is paralleled to long axis and lock-step.

Fig. 7—Model waxed. Cut out of wax A-B-C; this permits more light to pass through the silicate.

Fig. 8—Mesial view of model with wax preparation. It will be noted that the line of wax C-D is not a featheredge but is squared as shown more plainly in Fig. 10.

Fig. 9—Inlay cast and placed on model for finishing.

Fig. 10—Finished inlay ready to be cemented to natural tooth and silicate filled in window. Note labial portion of casting has flat surface. Note square margin C-D; lock-step runs along long axis of tooth; squared, strong lingual-proximal seat and well-flanged lingual third area.

Fig. 11—Labial view showing full-cast window inlay and silicate filled in window, which shows no gold.

strength. Complete this preparation as is shown in Figs. 5 and 6.

9. Waxing is now done. Build up the wax mesio-distally to the same measurements as the original tooth (Fig. 7). The wax forming the triangle A-B-C in Fig. 7 is cut away from the model in order to permit more light to

pass through the porcelain for the sake of translucency; at the gingival third or base of the preparation, on the other hand, the wax is intact, giving strength and stability to the restoration. If this step is confusing the triangle may be cut away after the restoration has been cast.

Fig. 8 shows the mesial view of the model waxed. It will be noted that the line of wax C-D does not extend flush to the labial, and that this line C-D is not a featheredge but is squared as shown more plainly in Fig. 10. The purpose of this square edge is to provide more porcelain to cover this edge

which is invisible from a labial view when finished.

10. The wax model is cast. This is shown in Fig. 10. The lock-step with its square form runs along the long axis of the tooth.

11. Finish and polish the restoration and carry to the mouth. The contact should be close enough with the approximal tooth to hold the restoration in place. Have the patient bite and make sure this labial bite is free on the restoration.

12. Cement restoration to place.

13. Place the rubber dam and cement the full cast window inlay. Hold a steady pressure on the restoration while the cement is setting. Clean away any excess cement that has found its way into the window.

14. Select the proper shade for the silicate. Use any technique for mixing but be sure to have plenty of porcelain on the labial. Let the porcelain set hard.

15. Wax and polish.

Comments

1. The restoration described here is strong, neat, and esthetically acceptable.

2. The casting is made indirectly and in one piece.

3. Although the patient bites on gold and there is a gold contact to the adjacent tooth, no gold is visible.

4. The restoration is inexpensive.

912 Chambers Building.

Announcement of Books Received

NUTRITION AND PHYSICAL DEGENERATION (A Comparison of Primitive and Modern Diets and Their Effects), By Weston A. Price, M.S., D.D.S. Foreword by Earnest Albert Hooton. Illustrated with 134 figures. New York and London, Paul B. Hoeber, Inc., 1939.

CLINICAL OPERATIVE DENTISTRY AND THERAPEUTICS, By W. Clyde Davis, A.M., M.D., D.D.S., author and publisher, 1939.

DISEASES OF THE MOUTH AND THEIR TREATMENT: A Text-Book for Practitioners and Students of Medicine and Dentistry, By Hermann Prinz, A.M., D.D.S., M.D., D.Sc. Dr. med. dent. and Sigmund S. Greenbaum, B.S., M.D. Second Edition, Thoroughly Revised; Illustrated with 324 Engravings and 12 Colored Plates; Philadelphia, Lea & Febiger, 1939.

HOW TO MAKE AND USE A SMALL CHEMICAL LABORATORY, By Raymond Francis Yates; Revised and Enlarged By S. A. Pellerano. (A Book for Beginners Setting Forth the Fundamentals of Chemistry in Easily Understandable Terms. Illustrated with Specially Made Engravings, Showing the Construction and Use of Chemical Apparatus.) New York, The Norman W. Henley Publishing Company, 1939.

NUTRITION AND PHYSICAL FITNESS, By L. Jean Bogert, Ph.D. Third Edition, Fully Revised and Reset; Philadelphia and London, W. B. Saunders Company, 1939.

Extensive Reconstruction: Report of a Case

JEROME M. SCHWEITZER, B.S., D.D.S., New York

A WOMAN, AGED 30, had had extensive dentistry performed several years previously (Fig. 1). Roentgenograms indicated the following missing teeth in the maxilla; on the right, the first molar, second bicuspid, first bicuspid, cuspid, and lateral; on the left side, the first bicuspid. Of the remaining maxillary teeth, extensive caries was present in the left second molar and beneath the amalgam restorations of the right second molar as well; moreover, the left central, lateral, cuspid, second bicuspid, first and third molars were pulpless and were covered with either cast crowns or jacket crowns. In the mandible, the left first and second bicuspid and first and second molars were missing; the right second bicuspid, first and second molars and left cuspid were pulpless. All the remaining mandibular teeth, with the exception of the anteriors, had been extensively restored.

Before the reconstruction of the mouth was begun, photographs and condylar roentgenograms were taken, and models were made from impressions taken in an elastic impression material (Figs. 2 and 3). After a careful study of the models, it was decided to extract only the badly infected lower right second molar. It probably would have been simpler to extract all the maxillary teeth and place a full upper denture, but because of the youth and health of the patient, we were reluctant to have that done. I discussed with the patient thoroughly and at great length the condition of the mouth from the point of view of focal infection, and I emphasized the dangers in retaining and restoring pulpless teeth and the possibilities of future complications. I stated clearly that it would be more advisable to extract all the upper teeth and insert a full upper denture. As this would have been less expensive, it also seemed to be a more practical idea; but the patient, although fully aware of the circumstances, refused to have the pulpless teeth extracted, and assumed complete responsibility for the result. Inasmuch as the patient was in per-

fect health, she preferred having a small partial removable bridge, with her own roots in position. Perhaps when she is older, she will become reconciled to having a full upper denture constructed. Because I was aware of what might happen with so many pulpless teeth, I insisted on the patient's signing a letter,¹ before the reconstruction was undertaken, in which was stated the complete nature of the case.

As the history indicates, the patient's mouth had been reconstructed once before. Some of the root canal fillings had to be done over, and as the most recent roentgenograms² indicate, with the exception of the upper left lateral and the lower right first molar there was no definite area of infection. I have informed the patient of my desire to amputate the tip of the right lateral, and she may permit me to do this.

I wish to stress that although in cases of this type my professional advice would be to extract the pulpless teeth, nevertheless if the patient were my wife or my sister and she were as young and in as good health as this patient, I do not think I would permit the extraction of the roots. Unless the infection were extensive, or the patient was in poor health, I believe it would be a moot question as to whether these roots should be removed. I cannot argue this as to whether it is right or wrong, for I know that professionally it is wrong, but personally, my feelings might tend toward retention of the teeth because of the youth and health of the patient.

Mandibular Restoration

It was decided to replace the mandibular teeth with a combination of internal attachments and a bridge with Gillette clasps, using a lingual bar removable appliance. The Gillette clasps would be placed on the poste-

rior cast crowns and the internal attachments on the distal of the lower right first molar gold cast coping and on the distal of the lower left cuspid gold coping.

The lower right second molar was extracted immediately, so that healing could take place as rapidly as possible. In extracting this tooth, the bone was cut back to permit, when the healing took place, the insertion of as large an internal attachment as possible. Experience in dental surgery is helpful in anticipating the additional room that is sometimes necessary for bridgework.

The jacket crown was removed from the lower right first bicuspid and the stump prepared again for another jacket crown. The jacket crown was also removed from the lower right first molar and this stump was also prepared again for a jacket crown which was to have a distal internal

Fig. 1—Mouth before reconstruction was begun.

Fig. 2—Models showing right side.

Fig. 3—Models showing left side.

Fig. 4—Lower case before polishing. Cast crowns are on the third molars with lug seats for clasps. A jacket crown is on the right first molar with a distal internal attachment which is parallel to the lug seats of clasps. A jacket crown is on the second bicuspid.

Fig. 5—Close-up of the right side of the lower construction. Note bending of clasp wire.

Fig. 6—Close-up of left side of lower construction. Note carving of teeth, broad saddle area, and bend of clasp.

Fig. 7—Lower case polished and in position on model.

Fig. 8—After lower case was assembled and worn in mouth for two weeks, it was decided to place in an anterior supporting bar in order to make all anterior teeth do an equal amount of work.

Fig. 9—Maxillary teeth with restorations removed.

Fig. 10—Maxillary teeth prepared and covered with aluminum crowns and with celluloid crowns filled with cement. Roots covered with gold root caps for protection. Transitional partial denture is fitted over these abutments.

¹The patient's signed letter was submitted to the Editor for examination.

²Full mouth roentgenograms were submitted with the article but could not be reproduced because of lack of space.

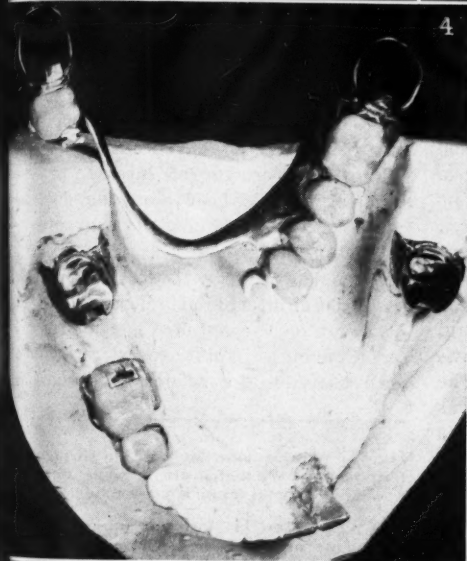


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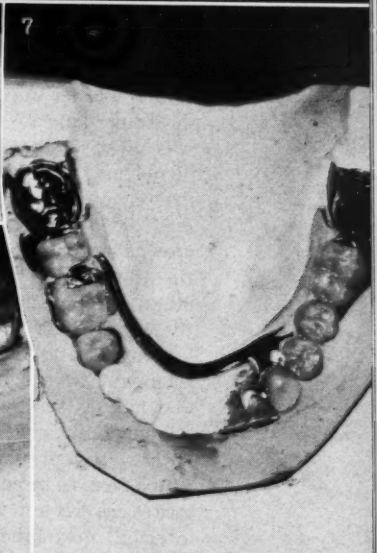
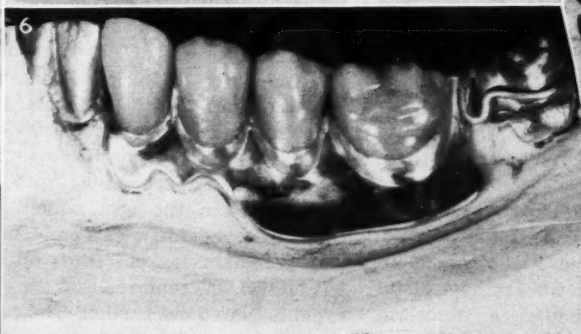
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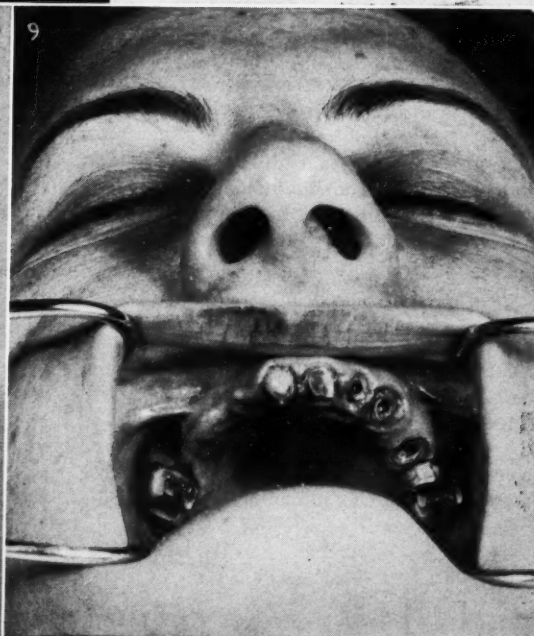
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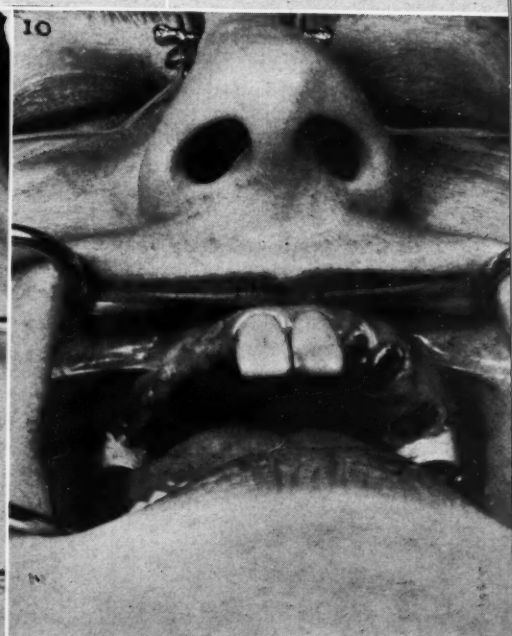
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attachment. The lower right third molar was prepared for a cast crown. The gum tissue was cauterized around these teeth, to allow a little more room for the castings. The lower left third molar was prepared for a cast crown which was to receive a Gillette clasp, whereas the lower left cuspid was prepared for a casting on the root which was to receive a jacket crown with a distal internal attachment (Figs. 4, 5, and 6). These teeth were covered with celluloid crown forms to protect them and to permit the patient to wear the old lower left clasp removable bridge during the reconstruction.

Copper band impressions were taken of all these preparations and amalgam dies were packed. After this, a full lower plaster impression and a wax bite were taken. With the amalgam dies in their respective positions in the lower plaster impression, the lower impression was poured in stone. This lower working model was substituted for the lower master model and articulated to the upper master model on the balancer by means of the wax bite. The cast gold crowns and cast gold copings were then made at the same time, thus making it possible to approximate the parallelism of the internal attachments and lugs for the Gillette clasp which were to be made in these castings.

Gold copings were prepared for the lower right first molar and left cuspid, which were to be covered by porcelain jacket crowns and were to have distal internal attachments. A porcelain thimble was constructed for the lower right second bicuspid. The gold castings and the porcelain copings were placed on their respective teeth in the mouth and the bite was adjusted. When this was found to be correct, a wax bite was taken as well as a full lower plaster impression. Mallot's metal was poured into the abutment teeth and the remainder of the impression was run up in stone. The new lower working model was again substituted for the old lower working model and was then articulated to the upper master model by means of the wax bite taken directly in the mouth. The construction of the lower bridge was now ready to be undertaken.

Unfortunately, the root of the lower left cuspid which had been pulpless

for many years split and had to be removed. This necessitated waiting until the area of extraction healed, and then the impression (Fig. 7) had to be retaken. The lower removable restoration was completed by using two Gillette clasps on the lower third molars. The cast gold crowns had deep lug seats prepared in the mesial surface, which were deeper at the distal than at the mesial aspect. By constructing the lug seats in this manner, the lugs did not pull out. The distal of the lower right first molar had an internal attachment, which was made parallel to the two lug seats of the Gillette clasps. The lingual of the lower left lateral had a lingual clasp. The gold saddle areas were made as large as the tissues permitted. The teeth were stained, and the lower case assembled in the mouth.

Preparation of Uppers

The preparation of the upper teeth was now begun (Fig. 9). The gold shell crown was removed from the upper left third molar and the tooth prepared for a cast gold crown. The upper left third molar was prepared for a cast gold crown and the left second molar for an M-O-D gold inlay. The old porcelain jacket crown was removed from the left first molar and a new preparation was made for another porcelain jacket crown. The crown of the left second bicuspid was removed from the root which was then prepared for a cast gold base. The porcelain jacket crown on the left lateral was removed and the root canal hollowed out further. The right first molar was prepared for a three-quarter crown.

Copper band impressions were taken of all these upper preparations and amalgam dies were packed. An impression of the upper was now taken in plaster and a bite was taken in red wax, against the new lower teeth. The bite, in this position, was closed about 2 mm. more than the original bite. The closure was upward and backward.

The new lower working model was articulated to the old upper master model. With all the dies in position, the upper working model which replaced the upper master model on the articulator, was articulated to the new lower working model by means of the red wax bite which was taken di-

rectly in the mouth. The bite was then opened on the articulator about 3 mm., which was a little more than the original opening. As this resulted in a slight overjet, which indicated that the lower jaw had moved upward and backward in closing, it was necessary, on this particular articulator, to move the upper model backward by means of the anterior screw, in order to effect the original tip-to-tip position of the teeth.

Construction of Upper Castings

The lower bridge was left in the mouth and the construction of the upper castings was started in the new working model. Castings were then made for the upper dies as follows: upper right third molar for a full cast gold crown; right second molar for a three-quarter crown with provision for a mesial internal attachment; right central for a gold coping with provision for a distal internal attachment; left central, gold core for a porcelain jacket crown; left lateral for a porcelain jacket crown on the gold core of the pulpless root; the gold core on the pulpless root of the left cuspid for a jacket crown with provision for a left distal internal attachment; the gold core on the pulpless root of the second bicuspid for a jacket crown with provision for a mesial attach-

Fig. 11—Lower case in position. Upper transitional partial denture is being worn while upper construction is progressing.

Fig. 12—Lower in position; upper gold abutments may now be seen in position. Some of the gold abutments carry mesial and distal internal attachments; second molar, mesial; central, distal; cuspid, distal; second bicuspid, mesial. Porcelain jacket crowns will fit over all anterior copings.

Fig. 13—Gold castings before being polished, and taken off model to show internal attachments.

Fig. 14—Same as Fig. 12 except that upper gold case is now in position.

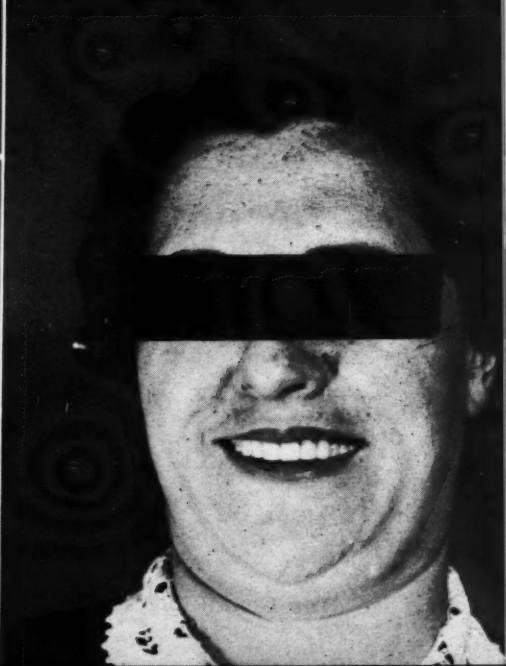
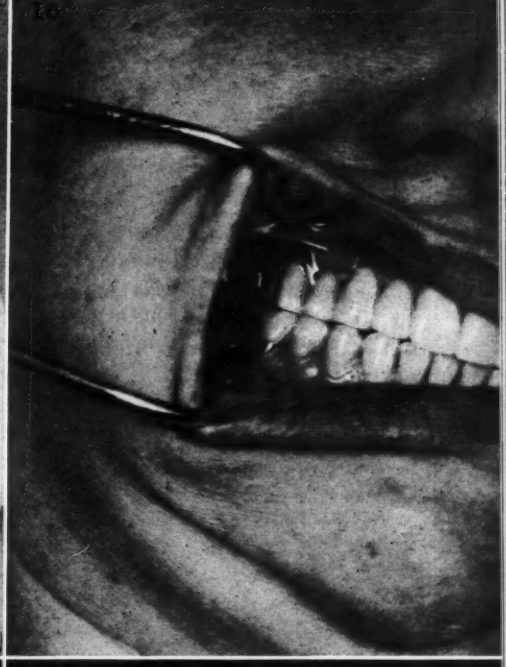
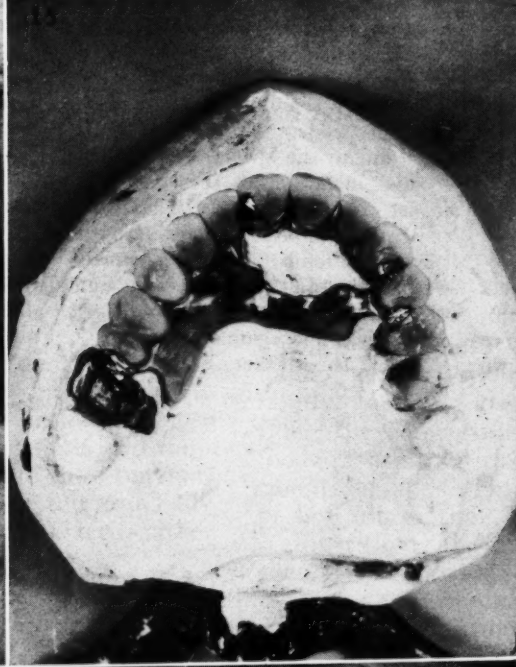
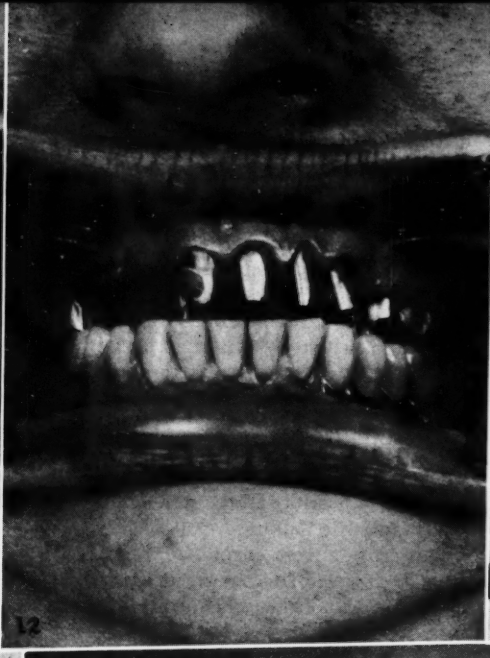
Fig. 15—Finished upper case on model with porcelain teeth assembled. Posterior gold castings on right and left molars have already been cemented in mouth.

Fig. 16—Finished case showing occlusal coordination on right side.

Fig. 17—Finished case showing anterior view.

Fig. 18—Finished case showing occlusal coordination on left side.

Fig. 19—Finished case showing full face view.



ment; the left first molar for a jacket crown; the left second molar for an M-O-D inlay; and the left third molar for a full cast crown.

After the upper castings were constructed, they were fitted on their respective abutments in the mouth (Fig. 12) and were spot-ground directly in the mouth to make sure that the bite was correct. A new bite was taken against the lower bridge, with the gold castings in position in the mouth, and a new upper plaster impression was taken. The gold upper castings were then removed from the mouth and placed in the plaster impression, and a new working model was poured (Figs. 13 and 14). This was articulated with the lower working model and the upper bridge was now started. Meanwhile, aluminum crowns filled with kryptex were placed on the abutment teeth and root caps of gold were placed on the three roots. An upper vulcanite transitional denture was constructed and worn against the lower bridge (Figs. 10 and 11).

Construction of Upper Removable Bridge

The procedure was now to construct the upper removable bridge (Fig. 15). An internal attachment was placed in the mesial of the three-quarter crown

of the upper right second molar. The distal of the coping of the right central was prepared for an internal attachment and the mesial of the left second bicuspid also was prepared for an internal attachment. The distal of the left cuspid was prepared for a square lug seat. The gold castings had been prepared so as to permit jacket crowns on the right lateral and cuspid. The upper removable bridge was now finished.

Jacket crowns were then baked for the left first molar and second bicuspid. The anterior teeth were now ready for the baking of porcelain jacket crowns from cuspid to cuspid. Just previous to the baking of these anterior jacket crowns, it was decided that it would be advantageous to place the posterior abutments into position; therefore, the cast crown in the right third molar and the three-quarter crown in the right second molar were cemented into position. On the left side, the cast crown of the third molar, the M-O-D inlay of the second molar, and the porcelain jacket crown of the first molar were cemented into position. The clasps of the transitional vulcanite denture were refitted to the new castings and the baking of the remaining jacket crowns was now completed.

When the jacket crowns were

baked, the remaining part of the upper construction was ready to be inserted. The gold coping of the upper right central was cemented into position first, and the removable bridge was placed into position to check the parallelism. The bridge was then removed, the gold coping of the left second bicuspid was now cemented in, and the parallelism was again checked. When this was found to be correct, the three anterior gold cores were cemented in place. Again the parallelism was checked, and, as this was still correct, the upper anterior jacket crowns were cemented in place. The occlusion was checked carefully; models were made; impressions were taken with an elastic impression material; complete roentgenograms, including roentgenograms of the condyles, were taken, and face and mouth photographs. Thus, except for minor adjustments, the case was completed (Figs. 16-19).

In order to reenforce the lower case further, and to prevent the left lateral from moving forward, a clasp from the left lateral to the right cuspid was constructed so that all the anterior teeth would serve as a brace, rather than have the left lateral take all the strain (Fig. 8).

730 Fifth Avenue.

The Editor's Page

THE THIRD EDITION of Bogert's important book on **NUTRITION AND PHYSICAL FITNESS**¹ is just off the press. Every dentist should give careful reading to this sane and practical presentation of a subject that is of vital interest to everyone meeting people suffering from the ravages of disease. More and more we are impressed with the complex nature of dental caries and with its vast ramifications. We know that the conquest of this disease will never come from isolated research but only when all the forces in society are integrated in the study.

Dental caries is not too remotely concerned with modern transportation, with modern methods of agriculture, with modern methods of distribution and of housing. This may sound like a far-cry but let us examine some of these aspects briefly: Transportation has made it possible to transport foodstuffs over long distances from one part of the world to another. In the preparation of these foodstuffs for this distribution, it is often necessary to change the nature of the food in such a way as to prevent deterioration, but with the change in the nature of the food the nutritive quality is often lost. Take white bolted flour, for instance: The grain is crushed between rollers and only the white inner portion of the grain which is chiefly starch is used in the final product. Those essential parts that contain vitamins and minerals, the germ, the bran and the outer portions of the kernel, are left behind and ironically enough are often used for stock feed rather than for human consumption.

Modern agriculture began when John Deere invented the steel plow a little over a hundred years ago. The plow broke vast expanses of prairie in the United States which in turn were seeded to grains. From these grains have come the products that we eat at our breakfast tables in the form of highly refined cereals and the nutritionless white bread that we consume at every meal. Fruits and vegetables, under the modern method of distribution do not ripen in the sun and are frequently picked immaturity so that they can be transported and distributed to distant parts. This too early harvesting destroys some of the nutritive quality of the foodstuff.

¹Bogert, L. Jean: *Nutrition and Physical Fitness*, Third Edition. Philadelphia and London. W. B. Saunders Company, 1939.

Modern housing is such that people are crowded into hotel and kitchenette apartments where they must eat literally from hand to mouth, from cans and packages of concentrated and prepared foods.

Bogert lists five characteristics of our national diet:

- (1) Cereals form a large bulk of the diet and most of these are consumed in the form of highly milled products.
- (2) Sugar forms a much larger proportion of the diet than previously.
- (3) More highly refined, canned and preserved foods are used.
- (4) Too prominent a place is given to muscle meats.
- (5) Dairy products, eggs, fruits and vegetables tend to be used less freely than formerly.

As a result of these deficiencies in the American diet, so Bogert contends, "we have constipation as the national complaint and an increasing amount of rickets, poor bone development and tooth decay."

Dental caries is in a sense a sign of malnutrition, a deficiency disease. The causes of malnutrition, according to Bogert, are three: ignorance, lack of home control, and poverty; not knowing what is best for a child or what is harmful for a child; the lack of parental discipline in the matter of food abuses, and finally, inadequate funds to buy sustaining foods rich in vitamins and minerals. When family budgets are limited, when poverty rides, the choice must be made to buy bulky foods rather than those that supply the nutritional demands. Thus we return to the point of beginning: that if these are the causes of malnutrition, the corrections are the antitheses; that is to say, education, adequate home control, and economic security are the preventives of malnutrition and partly, therefore, of dental caries. These factors society as a whole, acting as a coordinating unit, must strive to control.

It has been pointed out on this page many times before that no program of a national scope for prevention of tooth decay can be met by the dental profession alone nor for that matter by workers in the biologic sciences alone. Disease is an affair that expresses itself in a person but it often represents disharmony of the whole social mechanism. When we set out a program of prevention of tooth decay for the American people, we will find ramifications into every aspect of American life.

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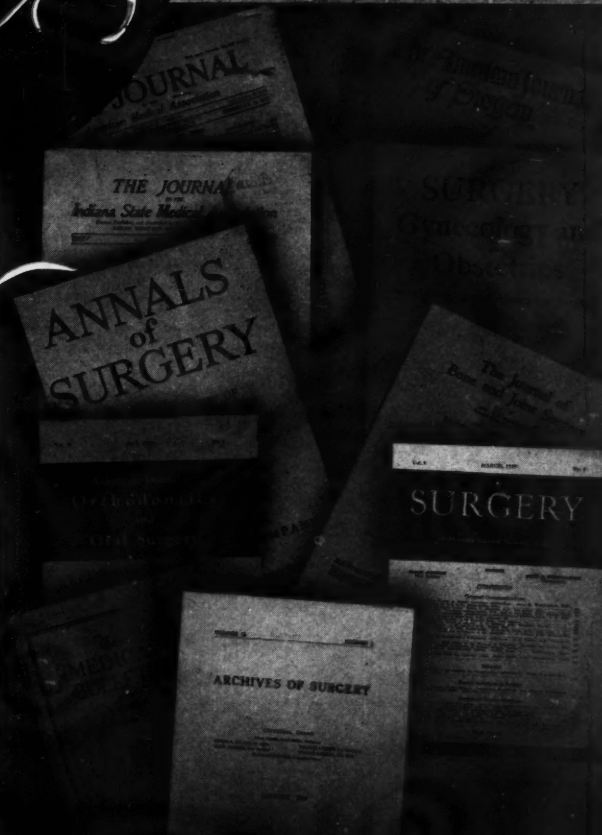
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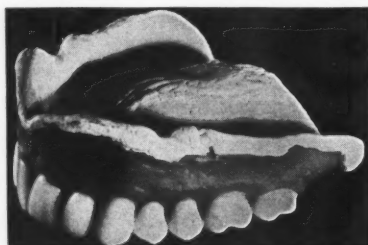
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NOTES ON THE

Cuff

Sticks and Stones . . .

One noon at the Milwaukee meeting Morton Loeb of New Haven, Connecticut and I took a long walk to stretch our legs. We talked ramblingly of many things but an important topic of our visit concerned the acrimony, the pettiness, the jealousies, the whisperings that are so lamentably a part of dental society politics. It is sometimes hard to believe that men who have had educational opportunities, presumably have some cultural background, should stoop to some of the mean acts that they do in dental society life.

Morton told a story from the long ago which bears repeating to every dentist. It was about a conversation with the illustrious and eminent E. C. Kirk, one time editor of the *Dental Cosmos*. Some particularly distressing event in dental society affairs came into Morton's life and he went to ask the counsel of the mature Doctor Kirk. They talked over the reasons why men are scandalmongers and back-biters and character assassins.

Finally, Kirk asked Loeb this question: "Morton, under what trees in the orchard do you find the sticks and stones?" Morton replied, "Under the productive, the bearing trees, of course." Then Kirk said, "So it is with people. The price that one pays for being productive, for bearing the fruits of knowledge and skill in the world, is to have the sticks and stones thrown at him."

The Brothers Mayo . . .

It was four years ago when Boyd Gardner of the Mayo Clinic took me to visit Doctor Charley and Doctor Will. We met Doctor Charley in the corridor, a smiling, friendly grandfather—nothing austere, nothing forbidding about him. Several days before, Boyd had extracted a lower bicuspid for Doctor Charley and he, like lesser people was having some post-operative distress. As anyone else might do, he opened his mouth, pointed to the void, and said to me, as if he were a naive patient, not the renowned physician, "Maybe you can think of something that will help this pain of mine a bit." I told him he was in far more capable hands than mine. Then Doctor Will came along: friendly, but a little more business-like, not quite so deliberate and grandfatherly.

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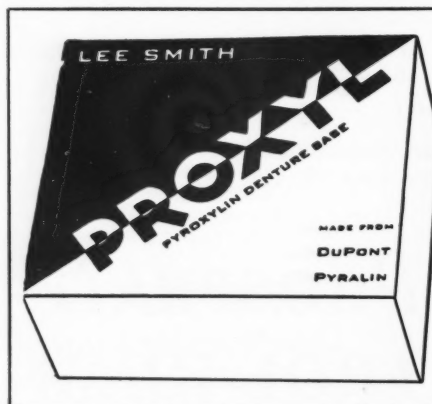


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the lands of the world. Presidents and kings had honored them. Doctor Charley and Doctor Will had a word for every colleague who stopped in the corridor as well as for the newsboys on the corner who were of the people. Now they are gone—within two months of each other. To dentistry they left a great intellectual heritage. It was Doctor Will who said, "Many of the degenerative diseases of middle life are of dental origin. The dental profession can add ten years to human life." And it was Doctor Charley who said, "Local lesions in the oral cavity may be the cause, the effect, or the sign of remote, local, systemic, or organic diseases."

Sinus Disease of Dental Origin . . .

Last month's Editor's Page dealt with a discussion of dental conditions that produce sinus disease. In response to this editorial, **Bernard P. Morgenstern** of New York submits the following:

"In re the production of artificial surgical openings through the alveolus and the forcing of roots into the sinus, this has been my experience. As an ounce of prevention is worth a pound of cure, I will start with

"Prevention—1. When extracting teeth in the neighborhood of the sinus, inquire whether the patient has ever had sinus disorder or surgery of any kind. The infection may antedate the surgery performed by the dentist.

"2. Examine the roentgenogram carefully for formation, number of roots and their relation to the sinus.

"3. Premeditated rather than improvised surgery is indicated. If there is difficulty in extraction or if an apex breaks, perform a flap operation, dissect the flap cleanly without injury of tissue, and if the space ahead is edentulous, take advantage of this by making the flap larger. Do not traumatize.

"4. Use only large instruments near the sinus.

"Treatment—A. I note the statement anent "the terrific edema that occurs" in your editorial. This would certainly apply from twenty-four to forty-eight hours later rather than while the operation was proceeding; therefore, the following is in order:

"1. If a small accidental opening is made, do not wash, curet, poke or fuss. Apply a small piece of gauze in the mouth of the socket, held in place by a figure-of-eight suture in the

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1. Denture must be thoroughly cleaned and dried.
2. Wipe with Konformax Cleaner to remove grease and allow air to dry for two or three minutes.
3. Rub a thin film of Konformax into surface of denture, using finger to spread. (To remove from finger, dip in Cleaner).
4. Dry thin film with electric fan or air syringe.
5. Apply additional Konformax in a thicker layer and spread evenly.
6. Place in mouth being sure denture is seated. Do not use too much pressure or tissue will be compressed.
7. Wipe off excess Konformax with denture in place.
8. Have patient return in day or two. Remove denture. If examination shows wrinkled area, additional Konformax is needed. Wash off saliva with cold water, dry thoroughly with electric fan and apply additional Konformax to areas indicated. Do not use Cleaner when adding Konformax.

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THE DENTAL DIGEST

1005 Liberty Avenue

Pittsburgh, Pa.

manner described by Theodor Blum.

"2. If a larger opening occurs an immediate plastic closure is indicated, using available tissue from the labial or palate.

"3. If a root is forced into the maxillary sinus, remove in as conservative a manner as possible. The exact manner of removal will depend on where the root is and the presence of the adjacent teeth. The socket should never be enlarged.

"B. Treatment of Chronic Cases—By chronic cases are meant cases in which the root or opening in the sinus has existed for more than twenty-four hours:

"1. An exploratory puncture should be made through the nose when indicated in the treatment of acute sinusitis.

"2. Roentgenograms should be taken of all sinuses.

"3. Irrigation of the sinus in chronic cases should be done through the established nasal opening.

"4. Operation: Removal of root and degenerated sinus membrane should be done with immediate suture and counter drainage through gauze from nostril to sinus. Subsequent irrigation if necessary should be done through the nasal opening."

Signs and Symptoms . . .

The only dentist who ever was the hero of a novel, so far as I know, was Frank Norris' San Francisco giant McTEAGUE, and he was no credit to the dental profession. His greatest ambition before he killed his wife was to have a big gold tooth hang out in front of his "parlor." That was before the neon lights or he probably would have had the ambition to have a red and blue neon tube outline the gold tooth. As I travel around the country and see the signs that dentists display to proclaim their occupation, I am tempted to reconstruct the character behind the bold and beckoning signs. Some of their letterheads are no less revealing than the signs—of their billboard personalities; they are both symptomatic.

The Enigma, Dental Caries . . .

Of all the theories as to the causation of dental caries, the nutritional aspects enjoy the most agreement among investigators. It is generally conceded that white bread and jams, candy and refined cereals are bad; that milk and orange juice and fruits and vegetables generally in the diet

are conducive to a healthier dentition. But what is the answer when a patient, aged 27, appears with very near complete immunity who has violated all the theories of food habits, who never saw a dentist as a child? This patient made her first appearance in a dental office at the age of 14 when two simple occlusal restorations in first molars were made. No dentistry has been needed since then.

—E. J. R.

DENTAL MEETING

Dates

Fall Clinic of Montreal Dental Club, fifteenth annual meeting, Mount Royal Hotel, Montreal, Canada, September 27-29.

University of Buffalo, School of Dentistry Alumni Association, thirty-ninth annual meeting, Hotel Statler, Buffalo, New York, October 11-13.

Odontological Society of Western Pennsylvania, annual convention, William Penn Hotel, Pittsburgh, October 11-13.

American Society for the Advancement of General Anesthesia in Dentistry, regular meeting, October 19, Midston House, 38th Street and Madison Avenue, New York City.

District of Columbia Dental Society, second and fourth Tuesdays in each month from October to June, United States Public Health Auditorium.

Ohio State Dental Society, seventy-fourth annual meeting, Neil House, Columbus, Ohio, November 6-8.

Louisiana State Dental Society, sixtieth annual meeting, Monroe, Louisiana, April 18-20, 1940.

Minnesota Dental Association, annual meeting, St. Paul Auditorium, St. Paul, Minnesota, February 27-29, 1940.



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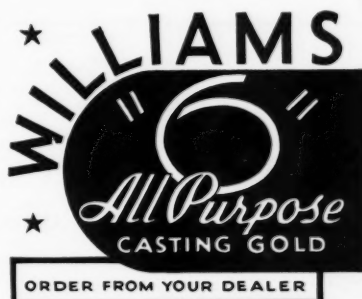
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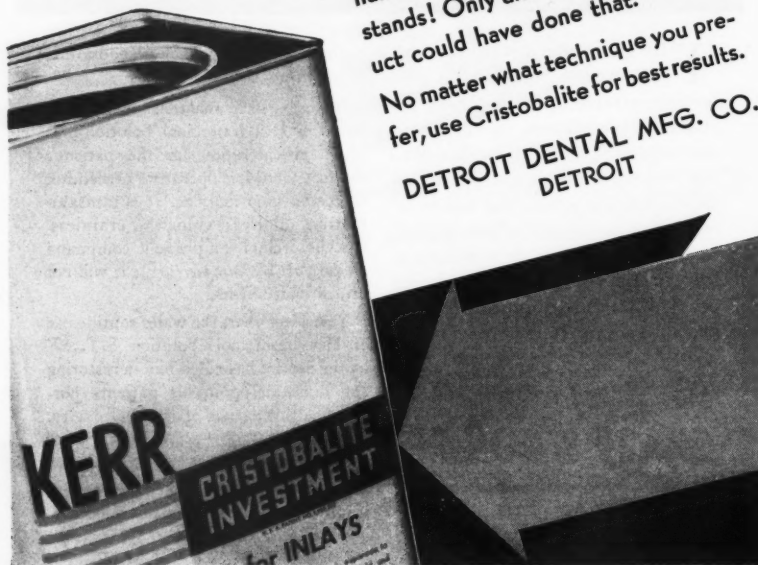
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Greater Philadelphia Society, annual meeting, Benjamin Franklin Hotel, Philadelphia, January 30-February 2, 1940.

Chicago Dental Society, midwinter meeting, Stevens Hotel, Chicago, February 12-15, 1940.

STATE BOARD EXAMINATIONS

New Jersey State Board of Dental Examiners, annual examinations, December 11-16, inclusive. Complete information may be had from the Secretary, Doctor Walter A. Wilson, 148 West State Street, Trenton, New Jersey.

California State Board of Dental Examiners, annual examinations, commencing December 4, College of Physicians & Surgeons, San Francisco, California. For information write to Doctor Kenneth Nesbitt, State Building Annex, San Francisco.

Ohio State Board of Dental Examiners, annual meeting, week of October 23, College of Dentistry, Ohio State University, Columbus. All applications must be in the hands of the Secretary at least ten days before date of examination. For information write to Doctor Morton H. Jones, D.D.S., 1553½ North Fourth Street, Columbus.

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S. Lichtig, formerly associated with the circulation department of *The Dental Digest*, is no longer connected with the publication.

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